REMARKS

In the Office Action, the Examiner rejected claims 1-20, 23-27, 92-109, and 113-137. Applicants canceled claims 21, 22, 28-91, 110-112, and 138-140 in a previous communication. By the present Response, Applicants amend claims 1 and 113 to correct minor clerical errors. Upon entry of the amendments, claims 1-20, 23-27, 92-109, and 113-137 will remain pending in the present patent application. Applicants respectfully request reconsideration of the above-referenced application in view of the following remarks.

Claim Objections

In the Office Action, the Examiner objected to claims 1-20 and 23-27 for failure to provide antecedent basis for the term "the predicted time interval" in claim 1. Applicants thank the Examiner for noting this clerical error, and have amended claim 1, as set forth above, to correct this error. Accordingly, Applicants respectfully request withdrawal of the Examiner's objection to the claims.

Rejections Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1-20, 23-27, 113-117, 120-128, and 130-137 under 35 U.S.C. § 103(a) as unpatentable over Lampotang et al. (U.S. Patent No. 6,597,939) in view of Strauss (U.S. Patent No. 6,467,472). The Examiner also rejected claims 92-109, 118, 119, and 129 under 35 U.S.C. § 103(a) as unpatentable over Lampotang et al. in view of Strauss and Orlando (U.S. Patent No. 4,657,025). Additionally, the Examiner rejected claims 1-20, 23, 25-27, 92-105, 107-109, 113-133, and 135-137 under 35 U.S.C. § 103(a) as unpatentable over Watrous (U.S. Patent No. 5,967,981) in view of Orlando and Strauss. Further, the Examiner rejected claims 24, 106, and 134 under 35 U.S.C. § 103(a) as unpatentable over Watrous in view of Orlando, Strauss, and Lampotang et al. Applicants respectfully traverse these rejections.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Moreover, non-analogous art cannot properly be pertinent prior art under 35 U.S.C. § 103. *In re Pagliaro*, 210 U.S.P.Q. 888, 892 (C.C.P.A. 1981). For the teachings of a reference to be prior art under 35 U.S.C. § 103, there must be some basis for concluding that the reference would have been considered by one skilled in the particular art working on the particular problem with which the invention pertains. *In re Horne*, 203 U.S.P.Q. 969, 971 (C.C.P.A. 1979). The determination of whether a reference is from a non-analogous art is set forth in a two-step test given in the case of *In re Wood*, 599 F.2d 1032, 1036, 202 U.S.P.Q. 171, 174 (C.C.P.A. 1979). *See also, e.g., Union Carbide Corp. v. American Can Co.*, 724 F.2d 1567, 220 U.S.P.Q. 584 (Fed. Cir. 1984); *Bott v. Fourstar Corp.*, 218 U.S.P.Q. 358 (E.D. Mich. 1983). In *Union Carbide*, the court noted that, under the *Wood* test, the first determination was whether "the reference is within the field of the inventor's endeavor." If it is not, one must proceed to the second

step "to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved." In regard to the second step, the *Bott* court stated that "analogous art is that field of art which a person of ordinary skill in the art would have been apt to refer in attempting to solve the problem solved by a proposed invention." "To be relevant the area of art should be where one of ordinary skill in the art would be aware that similar problems exist." *Id.*

Request Removal of Non-Analogous Art

Based on the foregoing two-part non-analogous art test, the Strauss reference does not qualify as analogous art. In regard to the first step of the *Wood* test, it is readily apparent that the Strauss reference is not within the field of Applicants' endeavor. Particularly, the present application is generally directed to the field of imaging systems and control of such systems. *See* Application, page 1, lines 5-9. In stark contrast, the Strauss reference is directed to the field of internal combustion engines, such as those mounted on boat. *See* Strauss, col. 1, lines 6-10; FIG. 1. Applicants respectfully submit that imaging systems and boat engines are clearly not within the same field of endeavor.

In regard to the second step of the *Wood* test, i.e., pertinence of the reference to the problem addressed by Applicants, the present application is generally concerned with the problem of artifacts in an image that are caused by physiological motion within a subject. *See* Application, page 2, lines 9-29. In addressing this problem, Applicants have provided a technique that enables more accurate *prediction of future occurrences* of physiological activity within a subject, which is based, at least in part, on comparing the time of a predicted future occurrence to the actual time of that occurrence. *Id.* Conversely, the Strauss reference is directed to measuring an attenuated exhaust pressure of a boat engine that approximates a *historical* average exhaust pressure. *See* Strauss, col. 6, lines 1-12. The Strauss apparatus then uses the attenuated exhaust pressure to adjust various controllable engine parameters, such as fuel injection and ignition, to ultimately control fuel-air mixture within the engine and to reduce emissions from the

engine. *See id.*, col. 6, lines 22-33. The Strauss reference, at best, discloses approximating a historic average of *past* exhaust pressure and adjusting other parameters based on the contemporaneous approximation. The Strauss reference does not disclose, teach, or even hint at predicting *future* measurements, much less refining the accuracy of such predictions based on a deviation of a predicted measurement from an actual measurement. Indeed, the Strauss reference appears to be devoid of any mention of prediction of future events.

The Strauss reference simply is not reasonably pertinent to the problem faced by Applicants. Further, there is no evidence whatsoever that similar problems even exist in these disparate fields of art. Accordingly, the *Strauss* reference is believed to be non-analogous art. For at least these reasons, Applicants respectfully request removal of the *Strauss* reference from consideration.

Should the Examiner, for whatever reason, believe that the Strauss reference is analogous art, Applicants respectfully request that she provide some legally supportable rationale in support of such an assertion, along with an explanation of why one skilled in the art of image acquisition and concerned with prediction of future physiological events of a subject would believe that knowledge in the field of boat engines would be particularly helpful in predicting physiological events, such as a heartbeat, in a person.

Omitted Features of Independent Claims 1, 92, and 113

Applicants respectfully note that each of the Examiner's various rejections of the present claims relies on the non-analogous Strauss reference. Upon the proper removal of the reference from consideration, the remaining art fails to establish a *prima facie* case of obviousness with respect to any of independent claims 1, 92, and 113, or their respective dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103 and allowance of claims 1-20, 23-27, 92-109, and 113-137.

As a final matter, Applicants note that, even if the Strauss reference *could* be considered analogous art, the various combinations of references cobbled together by the Examiner fail to disclose each element of independent claims 1, 92, and 113. For example, the Strauss reference fails to support the Examiner's assertions with respect to the elements of the present claims allegedly taught by this reference. As such, the present art of record cannot support a *prima facie* case of obviousness with respect to the present claims. However, because of the clear deficiencies of the rejections discussed above, further discussion concerning the additional deficiencies of the rejections is believed to be superfluous. Consequently, for the sake of simplicity and efficiency, Applicants simply reserve the right to elaborate on these additional deficiencies at a future time.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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